

Pregnancy following laparoscopy ovarian drilling for clomiphene resistant polycystic ovarian syndrome in Nigeria

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Case Report

Abstract

We presented a case of 29 year old nulliparous woman who presented with features of polycystic ovarian syndrome. She had ovulation induction with Clomiphene citrate for nine consecutive cycles to no avail. She achieved pregnancy following Laparoscopic Ovarian Drilling at the Assisted Reproductive Technology Unit of the department of Obstetrics and Gynaecology, University of Ilorin Teaching Hospital, Kwara State, Nigeria.

Keywords: Polycystic Ovarian syndrome, Assisted Reproductive Technology, Laparoscopic Ovarian Drilling.

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Après la grossesse ovarienne laparoscopie de forage clomifène résistant du syndrome des ovaires polykystiques au Nigéria

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Rapport de cas

Résumé

On nous a présenté un cas de 29 ans nullipares femme qui a présenté avec des fonctionnalités le syndrome des ovaires polykystiques. Elle avait induction de l'ovulation par le citrate de clomifène de neuf cycles consécutifs en vain. Elle atteint après la grossesse ovarienne par laparoscopie de forage à la procréation assistée technologie Unité du département d'obstétrique et de gynécologie, Université d'Ilorin hôpital d'enseignement (coopère avec), Etat de Kwara , Nigéria.

Mots-clés: syndrome des ovaires polykystiques, Procréation assistée Technology, laparoscopique forage ovarienne.

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Case Report

Mrs. B.I. a nulliparous woman who was referred from Aminu Kano Teaching Hospital (AKTH), Kano, Nigeria, presented at the Assisted Reproductive Technology (ART) unit of University of Ilorin Teaching Hospital (UIH) on 10th of January, 2013 on account of primary infertility due to polycystic ovarian syndrome of four years duration. She is a primary school teacher while her spouse is a self-employed Telecommunication Engineer. They reside in Port-harcourt, Rivers State, Nigeria. She got married 4 years prior to presentation and has been co-habiting with her husband since then, but unable to conceive despite having regular unprotected coitus. Prior to presentation, she developed irregular menstruation with occasional periods of amenorrhea and oligomenorrhea of six months duration. On account of these worrisome symptoms she had presented at several hospitals within and outside Rivers State where several investigations were conducted. Transvaginal 2D Ultrasound revealed polycystic ovaries, diagnostic laparoscopy and dye test at AKTH showed enlarged polycystic ovaries with bilateral patent tubes and hormonal assay revealed elevated LH/FSH ratio: >2, hyperandrogenaemia and normoprolactinaemia. She had used progesterone injection and oral contraceptive pills to regularize her menses. She had also used Clomiphene citrate (CC) (to a maximum dose of 250mg per day) to induce ovulation followed with timed-coitus for nine consecutive months to no avail. She neither smoke cigarette nor does she ingest alcohol.

Physical findings revealed an obese young woman (Body Mass Index of 30kg/m²) with excessive facial and body hair but no expressible galactorrhea. She had a blood pressure of 120/60mmHg and pulse rate of 76 beats per minutes. The results of Seminal Fluid Analysis (SFA) done for her spouse were normal. A diagnosis of Polycystic Ovarian Syndrome was made.

Procedure

Informed consent was sort and obtained for laparoscopic ovarian drilling which was carried out under general anesthesia. Pneumoperitoneum was achieved with the aids of Veress

needles using the inferior crease of the umbilicus in the midline. The 10 mm infra-umbilical port was inserted on the infra-umbilical crease through a transverse incision and two 5mm lateral ports were placed in the lower abdomen just above the anterior superior illac spine lateral to inferior epigastric vessels. Laparoscope was then introduced through the infra-umbilical port. Findings at operation were: grossly normal uterus (with a depth of 9cm), tubes, nulliparous cervical os, and clean pelvis. Enlarged ovaries measuring 60mm x 50mm x 40mm and appear polycystic (Fig. 1). Other intra-abdominal organs were normal. Tubal patency test was done by trans-cervical injection of methylene blue with the aids of spackman cannula which showed prompt spillage of dye from both tubes (Fig.2). A monopolar hook was passed via the ipsilateral port and was positioned at the right angle to the ovary avoiding injury to the hilum. Forty (40) watts of cutting current was used to drill 6 to 8 holes in the ovaries each lasting 4 seconds at a depth of 3-4 mm (Fig. 3). Subcuticular suturing using Vicryl 2/0 was used to close the port wound. Procedure was well tolerated and post-operative conditions were satisfactory.

Two days after the procedure (26th January, 2013); she had her menstrual flow which lasted for 6 days. The quantity was said to be much necessitated the need to use 4-6 perineal pad per day. With the onset of spontaneous menstruation, she was then placed on CC 100mg daily from days 2 to 6 of her consecutive menstrual cycles and counseled on adequate coital exposure with her spouse during ovulation period between 12 and 15 days of her cycle as determined with ovulation test kit (predict®). She did not see her menses in May, 2013; her Last Menstrual Period (LMP) was 25th April, 2013. She presented to the ART unit on 7th June, 2013 on account of six weeks history of amenorrhea and subsequently had serum pregnancy test done which was positive. Transvaginal 2D ultrasonography done showed a single intrauterine gestational sac containing fetal nodes with prominent cardiac activity. She was then placed on progesterone pessaries (cylogest® 400mg b.d) for luteal phase support for two weeks. A repeat ultrasound done on 21st June, 2013 confirmed fetal viability (Fig. 4).

The index pregnancy is currently on-going and has not been adversely eventful till date.

Discussion

The diagnosis of polycystic ovarian syndrome was by clinical and ancillary investigations revealing the presence of irregular menstrual cycles, anovulation, hyperandrogenaemia and the presence of polycystic ovaries as recognized by the European Society of Human Reproduction and Embryology (ESHRE)/ American Society of Reproductive Medicine (ASRM) consensus meeting in Rotterdam 2003 (1). The diagnosis of PCOS in this patient was in keeping with the above criteria which define the ovarian morphology in PCOS as the presence of 12 or more follicles measuring 2 to 9 mm in diameter and increased of ovarian volume ($>10\text{cm}^3$) (2). Patients presenting with this description are termed to be CC resistant if they fail to ovulate after 3 to 4 cycles of treatment with CC. This was the case in our patient.

The treatment modalities for clomiphene resistant PCOS include medical treatment with Gonadotrophins and / or Metformin as well as ovarian drilling (3). Ovarian wedge resection was the initial surgical management approach for anovulatory PCOS prior to 70s as it resulted in about 80% ovulation and 50% conception rates but was discontinued due to the risk of postoperative pelvic adhesions which was responsible for low pregnancy rate (3).

Following the discovery of CC, which has the advantage of cost and low monitoring, and high ovulation and pregnancy rate, some women who did not ovulate with CC were identified (4). The use of gonadotrophins for ovulation induction in PCOS which are not within the reach of most couples in Nigeria requires intensive monitoring to prevent ovarian hyperstimulation syndrome (OHSS). It may also be complicated by multiple pregnancies with its attendant socio-economic and medical sequel (3, 4).

Laparoscopic ovarian drilling (LOD) was introduced in the '90s as another surgical method of ovulation induction with the aim of minimizing pelvic adhesions caused by open surgery. This has met with certain degree of success with respect to return of ovulation and fertility with significant decrease in chances of pelvic adhesions (4). Our patient preferred one-

off therapy of LOD after thorough counseling. Therefore she opted for the procedure which is devoid of major complications, and yielded satisfactory ovulation and conception rates.

Successful pregnancy from treatment with LOD will of course treat the patients' infertility fulfilling the desire of the patient. LOD is more effective than or equivalent to metformin and gonadotrophins in resolving an ovulation and pregnancy (5, 6-8). Systemic review has demonstrated that there are no significant differences between ongoing pregnancies, births and miscarriages of LOD and gonadotrophins but LOD has reduced risk of multiple pregnancies (9). The median time to pregnancy after LOD was 135 days and LOD alone resolve infertility within 4 to 6 months in 50 to 60% of couples (4). Our patient achieved conception within this period

Observational studies have reported high rate of spontaneous ovulation and conception and that subsequent ovulation induction becomes easier following LOD due to a decrease in the concentration of LH after the procedure (3). This was demonstrated by our patient having to have achieved ovulation with CC following ovarian drilling which was previously impossible. Therefore, the application of diagnostic laparoscopy and LOD as the first approach to the management of infertile women with PCOS is advocated as this will drastically reduce the time to achieve pregnancy, the need for medical ovulation induction and facilitate earlier diagnosis of those women with anatomic infertility, who can achieve pregnancy only by in vitro fertilization treatment.

Acknowledgment

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Conflict of interest: The authors declare no conflict of interest.

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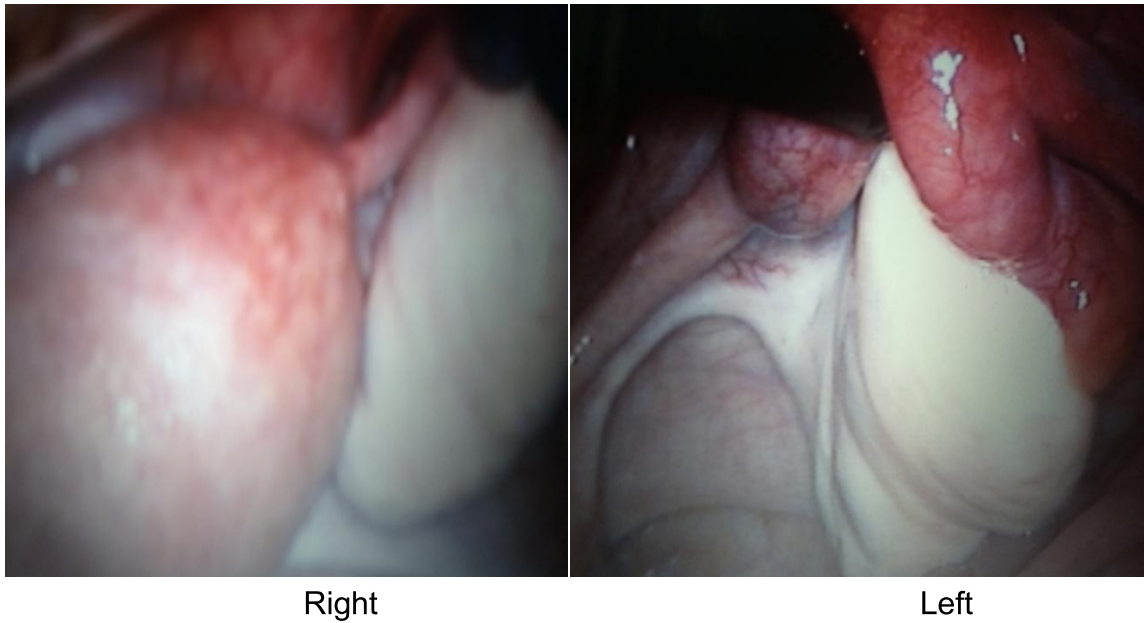


Fig.1 Right and left ovaries before drilling.



Fig.2 Dye test (Methylene blue) positive spillage on both tubes.

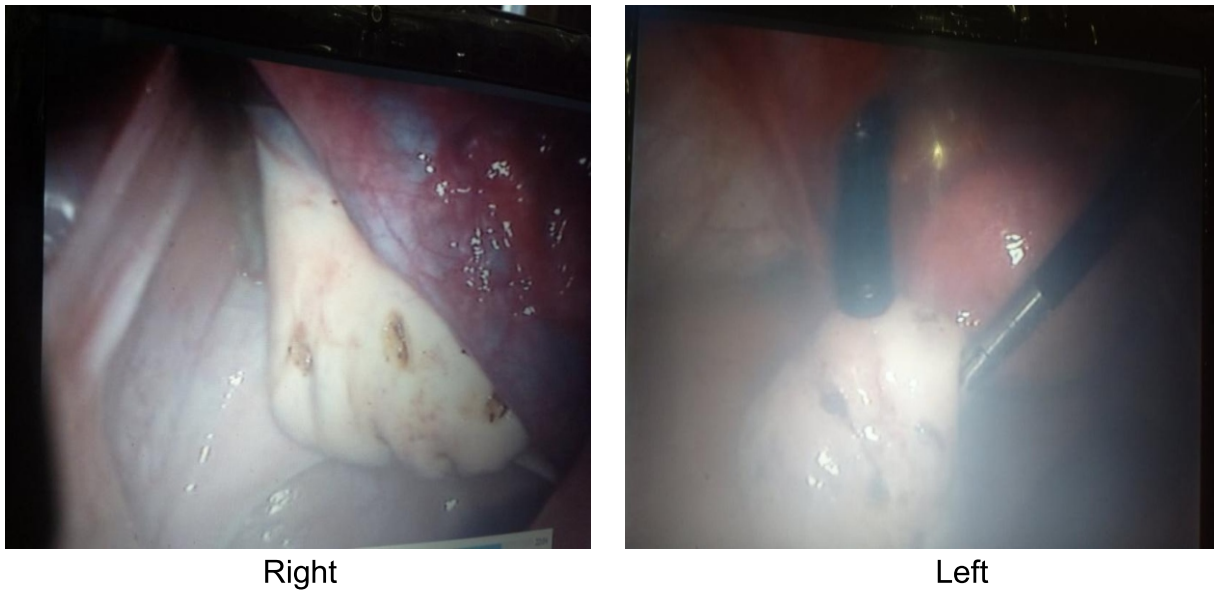


Fig.3 Right and Left ovaries after drilling



Fig. 4 Transvaginal 2D Ultrasound finding after period of amenorrhea